

are needed to establish the distribution outside of Michigan of these two forms.

MOLLUSCA OF CEDAR BREAKS NATIONAL MONUMENT, UTAH

BY WENDELL O. GREGG

During the Summer of 1935 it was my privilege to spend nearly three months at Cedar Breaks National Monument. This area is about 20 miles east of Cedar City, Utah. Here the Pink Cliffs, in some places exposed for a depth of nearly 2,000 feet, display a great variation of shades of color ranging from white or orange at the top to deep rose and coral. In contrast is the dark green of the heavily forested rim which attains an altitude of 10,400 feet. Though awed by the vastness of this spectacular beauty, my thoughts turned to the molluscan inhabitants which find shelter in these lofty forests of Engelmann spruce and alpine fir.

Though my collecting extended over the entire area, I collected most extensively in the region of "Sunset Point." Here the altitude was 10,000 feet. There was a moderate amount of moisture most of the time and but a few yards away a series of springs in a swampy meadow formed brooklets which were tributary to Long Valley Creek. All species listed except *Oreohelix strigosa depressa* (Cockerell) were found in the vicinity of "Sunset Point." *Oreohelix* was found in only one place at Cedar Breaks, along a steep wooded slope northwest of "Desert View."

The relative abundance of *Microphysula* was noticeable. The material collected here is referable to the Arizona subspecies, *Microphysula ingersolli meridionalis* Pilsbry and Ferriss. I had occasion to collect *Microphysula* from four other localities in southern Utah: Cedar Canyon, 10 miles from canyon mouth; southwest slope of Brian Head, Parawan Mts., at 11,000 feet altitude; head of Deep Creek, Kane County; and head of Mammoth Creek, Garfield County. These are all referable to *meridionalis*.

Many specimens of *Pupilla blandi* Morse were collected here, also from the following localities in southern Utah: head of Mammoth Creek; Zion National Park; head of Deep Creek; southwest

slope of Brian Head; and Cedar Canyon, 10 miles from canyon mouth. These specimens were all examined carefully and comparisons were made with unmistakable specimens of *Pupilla syngenes dextroversa* Pilsbry and Vanatta from Grand Canyon, Arizona. After a careful study it has been concluded that the Utah specimens are all referable to *P. blandi*. *Pupilla syngenes dextroversa* probably does not exist in this part of Utah.

The seventeen species and subspecies found at Cedar Breaks are:

Pisidium sp.¹

Oreohelix strigosa depressa Cockerell.

Microphysula ingersolli meridionalis Pilsbry and Ferriss

Vallonia gracilicosta Reinhardt.

Vallonia cyclophorella Aneey.

Pupilla blandi Morse.

Pupilla hebes Aneey.

Vertigo gouldii arizonensis Pilsbry and Vanatta.

Discus cronkhitei cronkhitei Newcomb.

Vitrina alaskana Dall.

Zonitoides arborca Say.

Retinella electrina Gould.

Euconulus fulvus alaskensis Pilsbry.

Succinea avara Say.

Stagnicola bulimoides tchella Haldeman.

Stagnicola bulimoides cassi Baker.

Stagnicola caperata Say.

**FLUMINICOLA AVERNALIS AND FLUMINICOLA
AVERNALIS CARINIFERA
FROM NEVADA**

BY WENDELL O. GREGG

The material from which *Fluminicola avernalis* Pilsbry and *Fluminicola avernalis carinifera* Pilsbry were described bore only the indefinite locality "Colorado Desert." Dr. Pilsbry¹ assumed that this referred to the Colorado Desert in the usually restricted sense and gave the type locality as "Colorado Desert,

¹ The *Pisidium* has been turned over to Dr. Stanley Brooks for determination.

¹ Pilsbry, H. A., NAUTILUS, 48: 90, 1935.